

GEOGRAPHICAL

MAGAZINE



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THE BRITISH
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Coracle-Fishermen of the River Teifi

by KENRIC HICKSON

WHEN Julius Caesar landed on our shores two thousand years ago he found the ancient Britons fishing from coracles—shallow, pear-shaped boats made by stretching the hide of an ox over a frame of willow and hazel rods. These crude vessels represent one of our oldest surviving crafts—even in Caesar's time they had been in use for centuries—and in some parts of Wales coracles of similar design and construction may still be found fulfilling a useful purpose.

Today, on the River Teifi, which flows into the sea between Cardigan and Pembrokeshire, the coracle-fishermen are carrying on their ancient craft of fishing for salmon from these quaint little boats. During the season they are a common sight on the stretch of the river between Llechryd Bridge and Cenarth Bridge.

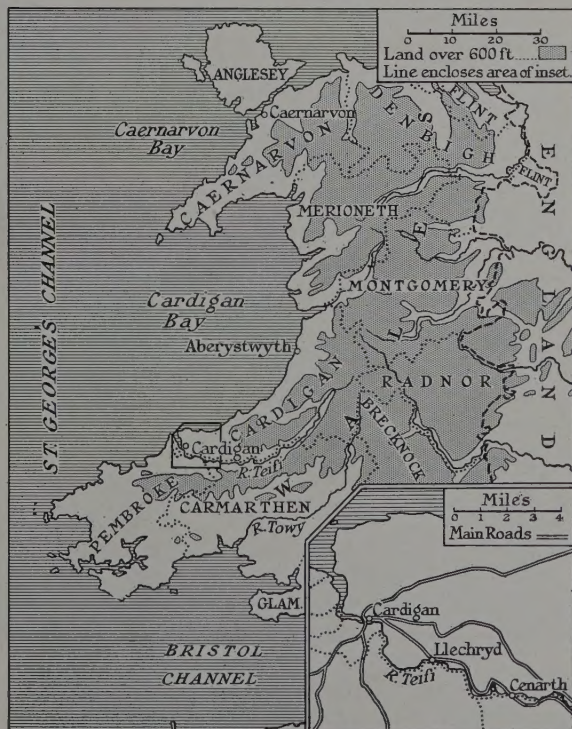
The construction of a coracle is a skilled craft and there is only one man left to supply the needs of the local fishermen. His name is John Christmas Thomas; he lives in Cenarth and he learned the age-old craft from his uncle. Recently a couple of local youngsters have been taking an interest in the work and they will be able to carry on when he retires.

Thomas begins by gathering a supply of locally grown willow and hazel. He strips the bark and, sitting astride his old shaving-horse, and using a double-handed knife, he splits the eight-foot lengths of willow into pieces about one-and-a-half inches wide and three-eighths of an inch thick. These are then bent into shape and, with the hazel rods woven to form a gunwale, he builds his frame round the strong wooden seat, to which is secured the sling for carrying.

Cow-hide is no longer used as a cover. Instead he stretches calico over the outside, wraps it round the gunwale, and secures it with copper wire. Finally, it is soaked in linseed oil and a good coating of tar or pitch is carefully worked into the fabric. It is then ready for the launching.

A well-made coracle weighs only about twenty-six pounds (weight is a consideration when they have to be carried many miles every day) and costs between £8 and £9. In spite of the fact that it receives some pretty rough handling during a busy season, a coracle has a life of around five years.

The nets are made in two parts, called the "armouring" and the "lint", and they, too,



A. J. Thornton



All photographs from Mirrorpic

Coracles have been used on the rivers of Wales for over two thousand years. On the Teifi at the point where the counties of Cardigan, Carmarthen and Pembroke meet these strange boats are still used by salmon-fishers from February to August



(Above) Cowhide has been replaced by calico, but the traditional form of the coracle is otherwise unchanged, and John Christmas Thomas is plying a craft with an ancestry as old as any in the kingdom. He is a real artist at his job (albeit a part-time one), bending the lengths of willow and hazel to form the frame and then stretching the calico over it, securing it to the frame with copper wire and finally covering it with pitch. (Right) The coracle-fishermen need nets to catch the salmon; the making of these is another village craft at Cenarth on the banks of the Teifi. Flax, horse-hair and cows' horns are used in their manufacture. The net is made of two pieces: the armouring and the lint. The two parts are joined to form a sort of large string-bag





A salmon leaping the falls at Cenarth on the Teifi. Net fishing from coracles, though strictly supervised under bye-laws, reduces the number of fish that can be taken by rod and line and the supporters of the latter method of fishing are active in local agitation to restrict the former

are prepared in a traditional manner, by the men and women in the village. They are made of undressed flax and the head-ropes—which are attached to the nets by means of rings made from the horns of cows, sawn into sections and sand-papered smooth—are of unshrinkable horse-hair. When the head-ropes are pulled (after a salmon has been caught) the net is almost completely enclosed like a string-bag. The length of the mounted net is restricted by bye-law to 20 feet.

The men fish in pairs. They launch their coracles near Cenarth Bridge and drift downstream. Each man manipulates the net with one hand and with the other he manoeuvres his craft by means of the wooden paddle made from oak or ash. In this way they follow the bend of the river for about half a mile before coming into land at a recognized point. Here, if they have been lucky, the struggling salmon is taken from the net and stunned with a blow from a paddle. Then, with their coracles slung on their backs, and looking like giant tortoises, they climb over the stile and

make their slow journey back along the road to the bridge—ready for the next attempt.

The biggest part of the catch is sold to a local dealer—a middleman who sends most of the fish to Billingsgate. This means that the fishermen receive a lower price per pound than they might otherwise obtain, but they are relieved of the responsibility and trouble of finding a market for their harvest. Incidentally, the visitor to the district can buy this delicacy at six shillings a pound!

I asked Tom Morgan, one of the 'old-timers', what kind of a harvest they have been having this year. "Not too bad," he replied, cautiously, in his lilting tongue. This was something of an understatement. In fact, the coracle men were enjoying one of the best seasons for many years and on one day in June it was reported that over sixty salmon had been taken from the river.

In spite of the peaceful setting and apparently untroubled atmosphere in the village of Cenarth, all is not well in the valley of the Teifi. There is conflict between the

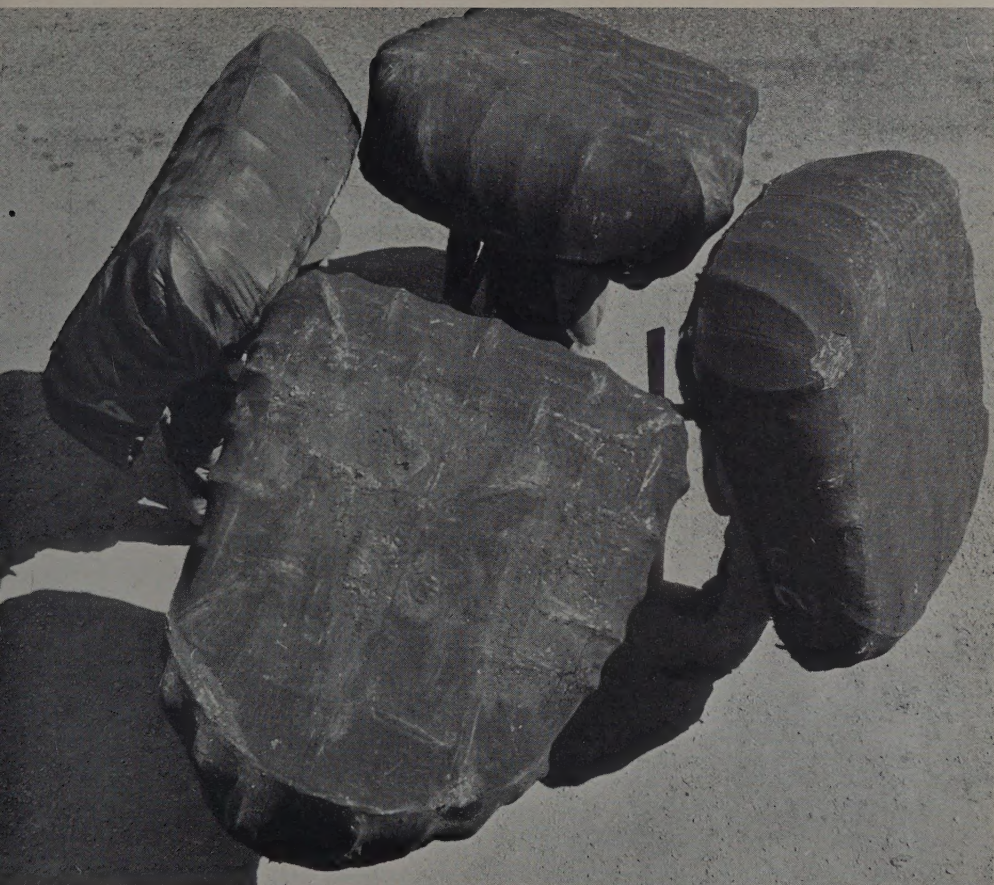
Coracles being paddled on the River Teifi, above Cenarth Bridge. Surprisingly enough, a coracle is propelled blunt end foremost by manipulating the single paddle in front, the boatman being seated, facing forwards, on the wooden seat which strengthens the coracle's framework, and to which the sling for transporting it is attached





Coracle fishers work in pairs, each man using one hand to propel his vessel and the other to manipulate his end of the net which is dragged between them, in the hope that when (below) they come to land they will have succeeded in taking a salmon that can be sent to Billingsgate Market in London





*And now the salmon-fishers moist
Their leathern boats begin to hoist;
And, like Antipodes in shoes,*

rod-and-line fishermen and the coracle-men.

Netting for salmon in coracles is permitted in Wales only on the Teifi and the Towy and, under a bye-law passed twenty years ago by the Teifi Fishery Board, licences for net fishing in the non-tidal stretches of the Teifi are issued only to those who were actually fishing during 1931 and 1932. As a licence expires on the death of the holder, or on his conviction for a fishery offence, it follows that the number of coracle-fishermen must be all the time decreasing. Before the war there were twenty-six men operating thirteen nets between them; now there are eight men working four nets. None of them are young and if this reduction in their numbers continues it

*Have shod their heads in their canoes.
How tortoise-like, but not so slow,*

These rational amphibii go! Andrew Marvell

will not be many years before coracle-fishing in the non-tidal waters of the Teifi above Llechryd Bridge becomes extinct.

After the war the Teifi Fishery Board passed a motion to repeal the 1935 bye-law but it was rescinded at the next meeting when the rod-and-line supporters turned up in force. Then, two years ago, an appeal was made to the Minister of Agriculture and Fisheries and, as a result, a public enquiry was held at Cardigan. Negotiations are continuing.

It will be a thousand pities if another of our old crafts—perhaps the oldest—should be allowed to go the way of so many traditional industries, sacrificed on the altar of indifference.

Bahawalpur

by IAN STEPHENS

The former Editor of The Statesman, following a recent visit, introduces us to a little-known part of Pakistan: a place that has unexpected cultural connections with Arabia; where the readjustment of a princely State to democratic pressures may be observed; and where the problems of West Pakistan's controversial frontier-relations with neighbouring India are particularly acute

FEW people visit Bahawalpur. It is looked on as a place you pass through, rather than stop at. A huge, sandy plain, featureless apparently, barren except where watered by canals from tributaries of the Indus but there very fertile, almost insufferably hot in summer, its brilliant colours of other seasons all killed then by dust-glare, it lies on West Pakistan's main railway-system about halfway between Karachi and Lahore—an inconvenient halting-point on what is normally a one-day, through-booked run.

My memories of it, got by window-glimpses on previous Indo-Pakistani train journeys, were blurred or patchy: tracts of scrub-desert; camels in swaying, nose-roped, bundle-bearing files along the roads; small, straight irrigation runnels through the fields of wheat and cotton; thorn trees; some fine though architecturally undistinguished Islamic domes; and occasional khaki-clad police on the station platforms, whose heads were topped, not with berets or the familiar Punjabi turbans, but with red fezzes.

And it was those fezzes, or curiosity about what they symbolize, that took me to Bahawalpur last winter, during a holiday visit to Pakistan too short for travel to Lahore or the hills beyond, but long enough to get away from Karachi—packed with its refugees and diplomatists, perhaps the most distressful yet unreal federal capital in the world.

The Bahawalpuri fezzes denote an anachronism, the hereditary rule of an Amir or Nawab; princely Pakistan in fact, and Pakistan's biggest princely State at that. They mean therefore a State which, in recent years, has felt strong democratic pressures, readjusting itself to them radically; but one which, despite these pressures and readjustments, despite the fact that the Amir is now a constitutional not an absolute ruler, still keeps an exotic flavour of its own, based essentially on the Royal House's past.

For here is the second fascinating point, very singular. The Amirs of Bahawalpur are of Arab stock, originating near Baghdad, proud of their reputed descent from the uncle

of the Prophet and the Abbasid Caliphs; proud, too, of their later forbears, invaders who fought and manoeuvred their way up the Indus valley centuries ago, to establish here, far from the coast, a non-indigenous culture. And many of the people of Bahawalpur are still proud of these things too, so that faded and remote Arabian events reflect themselves in various ways locally—for example in dress: not merely in constables' headgear, or the several kinds of very handsome Baghdadi or Bedouin-style uniforms, garish or austere, worn by the Amir's bodyguards, but in the profusion of bobbing red civilian fezzes, and the comparative rarity of turbans, in any Bahawalpuri urban crowd.

Culturally, then, so far as the local people are concerned—as contrasted with the immigrant Punjabi cultivators of the 1930s and the more recent refugees—Bahawalpur remains to a surprising extent a transplanted piece of Iraq, set against the border—since the subcontinent's partitioning in 1947—of Pakistani Punjab, and the politically tense and militarily bristling border of Indian Punjab and Rajasthan.

For visitors, the usual first stopping-point, after that '500-miles' train journey from the Arabian Sea and Karachi, is the principality's aptly named administrative capital, Baghdad-ul-Jadid. But about thirty miles before you get there lies Dera Nawabsahib, the main residential seat of the prince: of His Highness Sir Sadiq Muhammad Khan Abbasi. Here at Dera Nawabsahib, during the cooler months, he lives in a white palace, surrounded by the elaborate grandeurs of his ancestors—grandeurs shorn now of much of their meaning, for by stages, since Pakistan was created, he has relinquished his despotic ancestral powers. Like the luckier of his princely counterparts across the new border in India—that is to say, like those not yet reduced there to complete powerlessness—he is now, in effect, the Governor of a Province within a democratized constitutional framework, who happens to hold office for life rather than for a five-year term.



All Ektachromes by the author

(Above) At Baghdad-ul-Jadid, the capital of the former Princely State of Bahawalpur. Dry sunny climates have their advantages—witness this pleasant open-air beginning of the day's lessons, at a school in the Civil Lines. Recently education has been making good progress in the State: over 1000 primary schools are said to have been opened last year—partly through the conversion of State mosques—as well as nearly 40 girls' primary schools and some 130 adult centres. (Right) A morning shave just outside the old walled city of Baghdad-ul-Jadid. The client shows no qualms as the razor reaches his throat, despite the poor sight of his barber. Perhaps those frighteningly thick lenses signify trachoma, perhaps cataract: eye diseases are common in dusty subtropical lands, and opportunities in Bahawalpur for getting them attended to, though lately improved, still remain sadly insufficient



Emblematically Islamic, befezzed, rather Iraqi in appearance : a mounted bodyguard of His Highness the Amir of Bahawalpur, on duty by the pink and intricately sculptured main gateway that gives entrance to the Sadiq-Garh Palace at Dera Nawab-sahib. The Amirs of Bahawalpur are of Arab stock, originating near Baghdad ; and the uniforms of the guards and attendants become increasingly Arab in style as one proceeds inside





Foot-soldiers of the Amir's bodyguard, posted within the Palace gateway

And if you are privileged to meet him, you find a vigorous, good-looking and accomplished man in the early fifties, clad in European lounge-suit but also in betasselled Bahawalpuri fez, Anglicized in speech and manner, a product of the schooling considered correct for princes in the latter phases of the British Raj; loyal still to his friendships with British Royalty and former British Viceroy and provincial Governors; but loyal, as well, to the new nation of Pakistan—though at times somewhat puzzled, naturally, about her international and domestic troubles and his duties amidst them. A

historically divided man in fact, and on his Anglicized side lonely now, who took evident pleasure in the opportunity, rare during his residential winter months, of talking to a British traveller about a vanished Imperial epoch.

Unable, because of continuing bitter Indo-Pakistani disagreements, to retreat as aforetime during Bahawalpur's ferocious hot weather to the Simla hilltops, he chooses England instead, thereby perhaps illustrating his self-division. But as his secretaries point out, the airmail services from Karachi enable him to deal with State papers as expedit-



(Above) The Palace at Dera Nawabsahib, where the Amir lives during Bahawalpur's less torrid months. In British Imperial days he ruled over what was the premier Muslim State of undivided Punjab, a principality covering 17,000 square miles, which did not come into treaty with Britain until 1838. And he then wielded arbitrary authority over 1,500,000 people, subject only to tradition, his own good nature and the Political Department's scrutiny. But now he has divested himself of despotic powers, and functions within Pakistan's democratized constitutional framework much as a provincial Governor would, except that he holds office for life, not for a five-year term. (Left) An Arab-style bodyguard of the inner Palace



ously in London as he could in Murree, or as he did before Partition in undivided India's summer capital.

Beyond the palace and the ornamental gardens are barracks and hutments occupied by khaki-clad troops. No longer, I was told, the Bahawalpur State Forces—but troops of the Pakistan Army, unwontedly many troops and with modern equipment, on account of the new frontier's proximity.

As I drove away towards Baghdad-ul-Jadid I reflected upon human mutabilities. To the ordinary inhabitants of India or

Pakistan, at any rate in areas not directly involved in frontier-tensions or remembrance of the Partition-time brutalities of 1947-48, the end of British rule has made no great difference to life's daily routine. Brown politicians and bureaucrats do much the same things as did their previous white rulers, perhaps a little less efficiently and incorruptibly, perhaps rather more sensitively and responsively; but there has been no fundamental administrative or social overthrow. To princes, however, whose privileged routine was for decades artificially buttressed by

Nomadic dancers of Cholistan, the desert area of south-east Bahawalpur. In gay shawls and waistcoats and white shirts, these young performers at Channan Pir wait their turn, seated by a wall hung with desert-made rugs



the Raj against change, the difference must be big indeed. Innovations which, for the monarchs and great landed families of Britain, were spread over cautious centuries have for them been telescoped into a decade. His Highness of Bahawalpur is seeking to make this adjustment with dignity and intelligence.

Baghdad-ul-Jadid, the seat of executive government, where the popularly elected Ministers have their offices, is a hub of activity and in process of rapid enlargement. Outside the old walled city—romantic perhaps, but jumbled and insanitary—a spacious and hygienic model town is springing up. New schools and colleges encased in bamboo

scaffolding, hospitals and government offices under bustling construction or enlargement confront you at every turn; there are trim bungalow residences in the latest style; and on the outskirts a grand new sports pavilion stands forth amidst well-tended grounds, the pride of all.

As with developments elsewhere in the new India and Pakistan, the blueprints for some of these things were British, done years ago by enthusiastic local officers, and then pigeon-holed by their superiors in the Central Secretariat—men either prudent or unenterprising cheeseparers, according to your point of view. But during World War II Bahawalpur luckily achieved much un-

End of the Friday gathering at Channan Pir—a combination of prayer-meeting and rustic fair. Devotions before the shrine are over; there has been gossip, and perhaps some trade by barter; the dancing has been watched. The nomads now mount to leave for far encampments among the dunes





Beneath these graceful domes at Derawar repose former Amirs of Bahawalpur and their families. They stand aloof, some distance from the huge tawny bulk of the fortress—the dynasty's Windsor Castle—within a quiet enclosure amid well-tended gardens. There are several such tombs, all forming an architecturally harmonious group. Inside one, mirrors on walls and ceilings augment the feeling of regal spaciousness



Men of Bahawalpur's Camel Corps on parade—a Corps distinguished for gallantry in Egypt and Mesopotamia during World War I. Motor transport has reduced its operational value, but part is kept in combatant trim; wireless-equipped squads are maintained in the desert on locust-control work

expected wealth, as insatiable India-wide demand for her agricultural produce enabled her to redeem the heavy debt that had been incurred for the new irrigation-canals built in the 1930s—canals which brought an increase of 35 per cent to her population in ten years.

The Ministers, members of Bahawalpur's first fully democratic cabinet, diffuse confidence. And, like so many men holding important posts in newly-independent Asian countries, they are young. Youngest of all is the Chief Minister—an energetic person not much over thirty. To be able to do so much, at that age, must be fun; and many solid and speedy achievements certainly stand to his

administration's credit. But it may be permissible, at moments, to wonder. The Muslim League, on whose ticket the present government was swept to power in 1952, has lost some popularity in Pakistan of late. Perhaps, as well, the new projects have rather too showily urban and industrial a bias. The peasantry, after all, remain the backbone of Bahawalpur's economic strength, and schools, roads, dispensaries, veterinary stations and so forth are obviously much needed in the countryside.

This thought leads to large, fundamental problems which extend far beyond Baghdad-ul-Jadid, far indeed beyond Bahawalpur:

the problems of West Pakistan's border-relations with neighbouring India, and of supplies of irrigation-water down rivers whose headwaters India controls. For if, owing to continuing Indo-Pakistani discord, about half the cultivable area of arid Bahawalpur, whose rainfall averages less than 10 inches a year, should become barren because of water-starvation—a contingency that this year's sharpened controversies point to—then her spectacular advances in town development, in industrialization, and indeed in democracy might be brought to naught.

Fortunately for Bahawalpuris, their country's south-western cultivable part is almost beyond reach of Indo-Pakistani acrimonies. The great confluence of the Jhelum, Chenab and Ravi irrigates it, and the first two, at any rate, of these rivers, though their upper reaches run through Indian-held Kashmir, are technically difficult for India to exploit. But geography and the Radcliffe Award of 1947 have put the other, north-eastern part at India's mercy in the matter of water. This is irrigated by the Beas-Sutlej confluence, and the Sutlej, further up, is already being energetically tapped for India's own irrigation projects. The formal opening by Mr Nehru last July of part of the great Bakhran-Nangal canal system—which must necessarily divert water from Pakistan—provoked a storm of Indo-Pakistani recrimination and much international concern.

Considerations of this kind are big and exciting enough, in themselves, to give Pakistan's more curious visitors ample cause nowadays for not just passing through Bahawalpur, but for stopping there. Conditions on the frontier between West Pakistan and India are indeed ludicrous and the Bahawalpuri sector is particularly little known. Officially, only two permitted ways of land transit across the frontier exist, all along its vast, bendy length from the sea to the southern marches of Kashmir. Land transit moreover means crossing by car, or on foot or by camel, for railway passenger services ceased soon after 1947.

Neither of the two land-transit routes however is in Bahawalpur; they lie on its flanks—far

away at Wagah near Lahore in the Punjab and Kohrapur in Sind. So the principality's frontier with India, in itself about 300 miles along, is to governmental eyes untraversable, totally blocked; and in the more populous tracts such as near the north-eastern end—where there is fairly dense settlement in the irrigated canal-colonies—patrolling by armed police or troops on both sides, plus a chain of border posts and the average peasant's dread of things foreign or unknown, ensure that none but the hardest smuggler traverses it. The whole Indo-Pakistani frontier, in fact, confronts the traveller with obstacles, harassment, and misgivings very like those set up by the Iron Curtain in post-war Europe.

A pleasant motor-trip from Baghdad-ul-Jadid took me to that north-eastern end of its Bahawalpuri sector—to the Suleimanki canal-headworks, militarily and irrigationally the principality's most menaced and interesting region. The distance covered was about the same as from London to Exeter.



A. J. Thornton

We drove for mile after monotonous flat mile amidst wheat-fields and cotton-fields, all irrigated from the Sutlej-Beas confluence, all at present tolerably well supplied, but all under threat, because of India's intended water-diversions further up. And an eastward turn from the main road, a little distance from our goal, vividly revealed how horrible the results of water-stoppage in these desiccating, blue-skied Asian climates can be. Here were about 60,000 exceptional Bahawalpuri acres which, in the undivided India of British days, got their water not from Suleimanki—now just inside Pakistan—but from the Firuzpur headworks upstream, which are in India. Supplies down this particular canal, according to my informants, were stopped by the Indians in April 1948 and had never recommenced. At any rate no water could have come there for some years. Shifting yellow dunes smothered much of the once-fertile fields; in a few hollows pathetic sparse crops of winter gram struggled to survive; spiny desert shrubs, blown sand and sun-crumbled earth half-choked the dried-up runnels.

The sealed frontier itself, at Suleimanki, was equally deplorable. Armed Pathan border police manned it alertly on the Pakistani side; and over the way, beyond the emptiness of no-man's-land, Indian guards peered at us from nest-like wooden watch-towers thirty feet tall. Past the final barbed-wire check-post the road, traffickless since 1947, fell suddenly into disrepair before rounding a bend, weeds sprouting through its shattered surface, dense outgrowths from the adjacent jungle overspreading it.

But I had not come to Bahawalpur to get politically anguished. I was on holiday; and all the time, when motoring north-eastwards through those controversial and as yet richly productive regions irrigated from Suleimanki, I had been half aware of the principality's mysterious, worthless, unvisited, utterly unpolitical three-fifths, which lay away on my right flank. Out there was Cholistan, Bahawalpur's part of the great Thar or Indo-Pakistani desert. Could I perhaps go to it too?

The Minister at Baghdad-ul-Jadid to whom I first suggested this had been astonished. Go to Cholistan; what ever for? There would be nothing to see; only sand, scrub, space, and a few nomads and their herds. The cabinet were doing what they

could about the place; wells were being dug or repaired, desert handicrafts encouraged, and so on. But surely I'd much better look first at the important industrial undertakings at Rahimyar Khan down in the south-west?

A sympathetic official, however, was later found who lent ear to my pleas; two jeeps became available; and some carefree days in Cholistan concluded my stay. We traversed a huge area—Fort Abbas, Channan Pir, Dingarh, Rukanpur, Derawar. Mostly the driving was over endlessly repetitive, hummocky, scrub-cluttered dunes each of which rose and fell 200 feet or so; very slow, gear-changy, dust-clogged, tedious driving. But sometimes the landscape suddenly widened into vast pans of completely flat sun-baked mud. Then the swiftly leaping little chinkara deer of the desert could be raced and overtaken. Or there were occasional nomadic encampments by water-holes to pause at, or ruined pre-Islamic forts such as that at Dingarh. Rukanpur, the limit of our expedition, is so remote that, according to local assertion, no Englishman had ever before bothered to visit it.

Channan Pir stands forth in the memory as specially delightful. Here, every Friday, the camel-riding nomads gather from afar throughout the desert to pray before a saint's tomb, to trade and to gossip, and to dance—the young men bedecking themselves in brilliant shawls and waistcoats and long, outhanging white shirts of a muslin-like fineness, which sway to their tall bodies' willowy movements. Afterwards, on our particular Friday, they rested within a small courtyard whose walls had been draped with gay desert-made rugs—a colourful scene.

And then the finale of our trip: approach in a clear dawn to the desert fortress of Derawar, the Windsor Castle of the Bahawalpuri Royal House; an immense, tawny bulk, offset by the delicate pinnaced whiteness of the adjacent royal mosque. Entry through massive iron-studded gates, between sentries of the bodyguard clad in uniforms of the austerer, Bedouin sort. Within, drawn up on parade, men and steeds of the famous Camel Corps, diminished now in numbers, but lovingly maintained in all their original beauty. And then a sally forth, to pay our respects at a group of elegant great blue-and-white domes nearby: the tombs of past Amirs of Bahawalpur. Beneath rested several centuries of princely bones.

Explorers' Maps

VII. The Far East in the 16th and 17th Centuries

by R. A. SKELTON

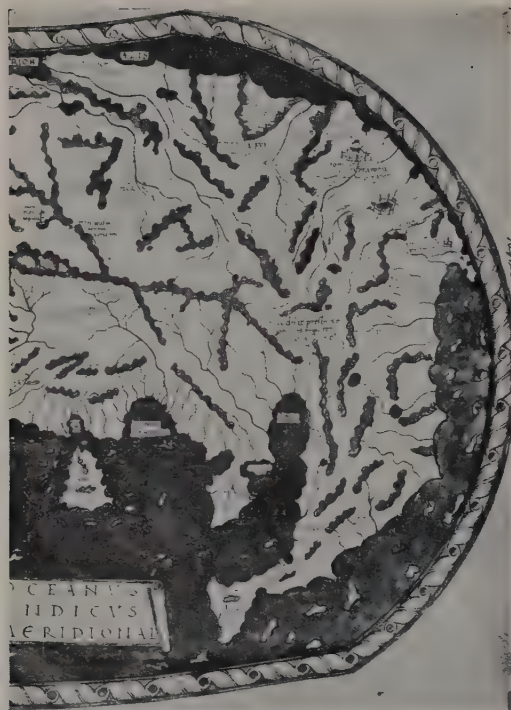
This series of articles by the Superintendent of the Map Room at the British Museum presents, in regional order, some episodes in the history of exploration for which the evidence of maps is specially interesting or accessible. The text is to be read as a commentary on the maps and not as a connected history of discovery. Mr Skelton here shows how European mapmakers gradually came to acquire a more accurate knowledge of the configuration of the coasts of China and Japan

"WHOEVER is lord of Malacca has his hand on the throat of Venice." This triumphant phrase, written soon after the fall of Malacca to the Portuguese in 1511, proclaimed the shift of mercantile power, from the Mediterranean to the Atlantic nations, accomplished by the advance of Portugal into the Indian Ocean. Their occupation of Malacca opened to the Portuguese the gate into the Eastern Archipelago and the China Sea, and secured a pre-emption on the Far Eastern trade for which this port was the principal market. They knew little of the coasts beyond Sumatra and the Malacca Strait. To the east of the Malay Peninsula, contemporary maps still laid down another great horn of land curving southward from Indo-China—the last trace of the continental coastline within which Ptolemy's world-map had enclosed the Indian Ocean on the south and east (Fig. 1). Further north, the maps marked the provinces and cities of Cathay described by Marco Polo and Odoric of Pordenone.

At Malacca and in the Spice Islands, to which they penetrated in 1512, the Portuguese gathered information on the navigation to the east from Chinese and Arab pilots. "What I say of these islands [Amboina and Banda] . . . I have learnt from Moors, from their charts, which I have seen many times," wrote Tomé Pires at Malacca in 1512. Francisco Rodrigues, who was in the expedition to the Spice Islands, copied "a large map of a Javanese pilot, containing . . . the navigation of the Chinese and the Gores [probably Ryukyu islanders]"; and the sailing directions from Malacca to Canton, with charts, which Rodrigues compiled about 1513 were doubtless taken from Chinese pilots (Fig. 2). After the capture of Malacca Portuguese ships traded along the South China coast as far as

Canton, first reached in 1513; and in 1517 Pires was landed at that port as ambassador from the King of Portugal to the Emperor of India. The mission failed, for while he was at Peking, the Portuguese fell foul of the Chinese at Canton, where the members of the embassy ended their lives in captivity. The *Description of the Orient, from the Red Sea to China*, written by Pires before his mission, was the first European account of the Far East, of comparable fullness, since the Book of Marco Polo. In it we find the earliest use of the names Canton ("Quantom"), Peking ("Peqim") and Japan ("Jampom"); the first European mention of the Philippines ("Luções"); and a description of the East Indies perhaps supplied by Rodrigues, whose charts and rutters are bound with the surviving manuscripts of Pires' book.

In 1521 Magellan's fleet, bearing to the north of the Spice Islands "as he had information that there were no provisions at Maluco", had discovered and sailed through the Philippines, where its commander was killed (Fig. 3). The ensuing dispute between Spain and Portugal on the line of demarcation in the East has been described in an earlier article. From the agreement reached in 1529 Spain excluded the Philippines, which offered a terminal port for trading voyages from her colonial possessions in Central America, and in 1565 the islands were occupied by an expedition from Mexico under Miguel de Legaspi. A ship of this fleet, piloted by Andres de Urdaneta, pioneered the return passage across the Pacific, sailing to 40° N to get out of the trade winds into the belt of westerlies; and the route established by Urdaneta was followed by the galleons which made the annual voyage between Manila and Acapulco, in New Spain, until the 19th century (Fig. 7).



(Fig. 1: left) The eastern half of the world-map drawn by Henricus Martellus about 1490 illustrates European conceptions of Asia and the Far East before the Portuguese reached India. As in Ptolemy's maps, the size of Ceylon is exaggerated, and the peninsular form of India flattened. The Malay Peninsula has its Ptolemaic name "Aureus Chersonesus". To the east, beyond the "Sinus Magnus" a great peninsula ("Catigara") curves southward. This feature is a remnant of the continuous coastline which in the world-map of Ptolemy had linked south-east Asia to South Africa, enclosing the Indian Ocean to the south; the cartographer, following the reports of travellers since Marco Polo, has indicated an open passage from the Indian Ocean into the China Sea. To the north lies "India orientalis", with the realm of Presto John "emperor of all India", and the provinces of Cathay ruled by the Great Khan, as described by Marco Polo. The geography of Central Asia derives partly from Ptolemy and partly from Marco Polo. (Fig. 2: below) The Gulf of Tongking—a sketchy chart drawn by Rodrigues about 1513 from information of Chinese pilots. At the Gulf's head "Cochin da China", at its mouth Hainan island

All illustrations from the British Museum

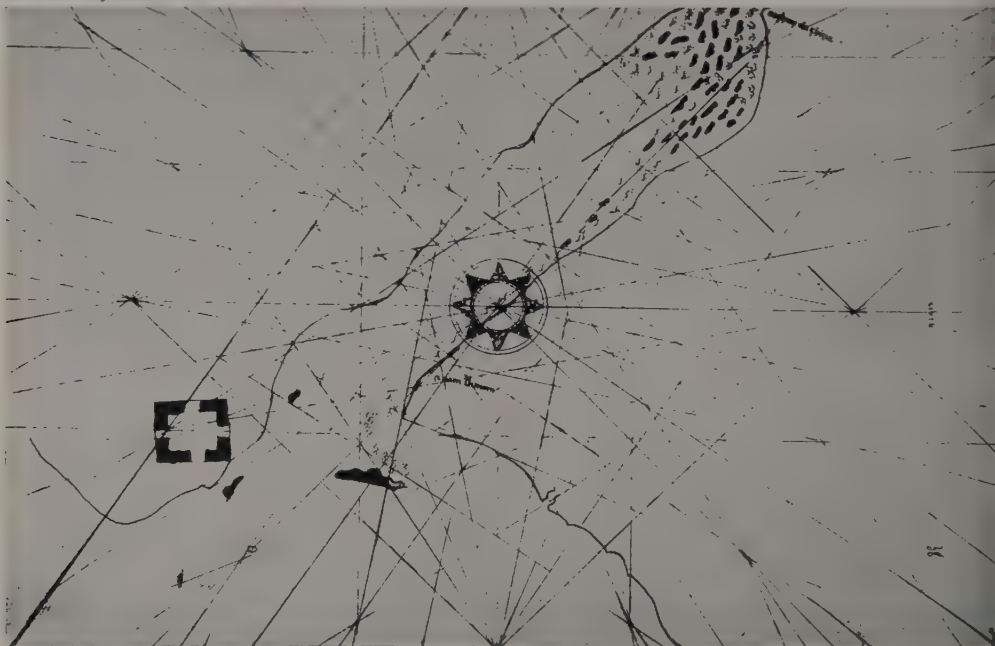
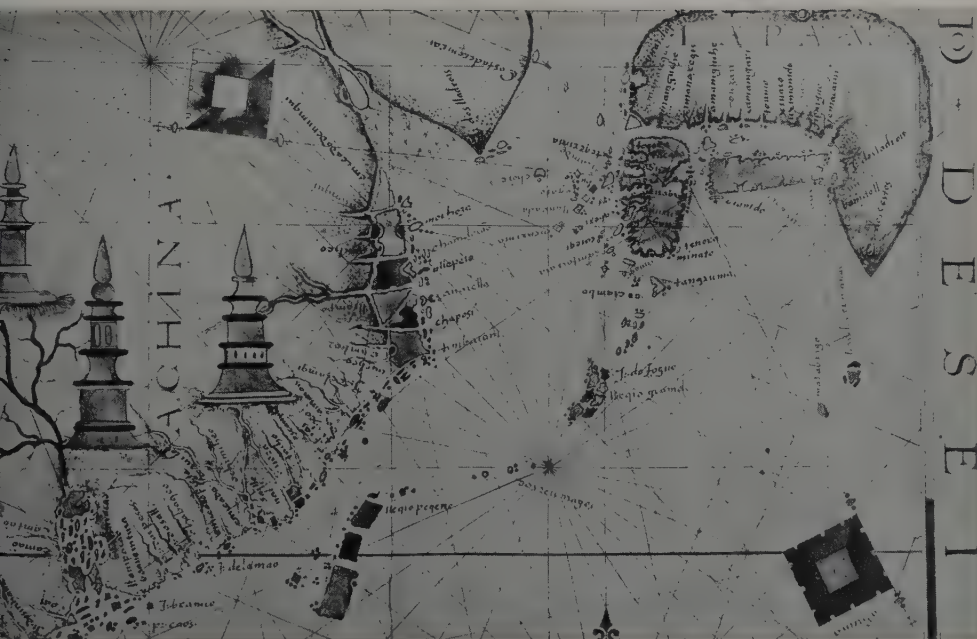
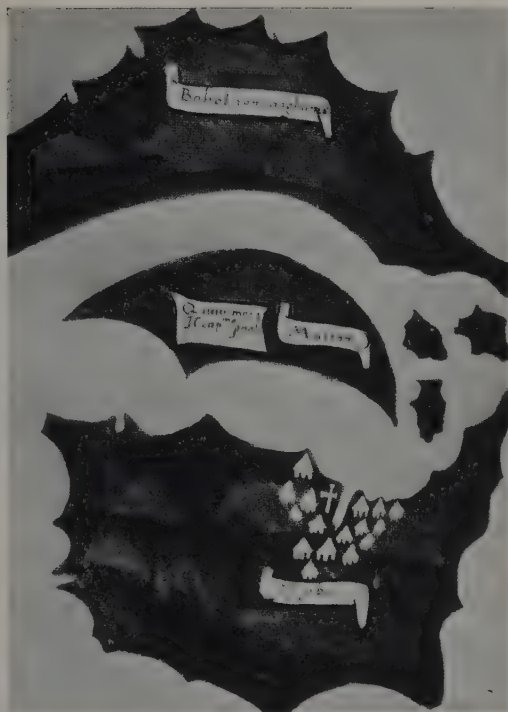
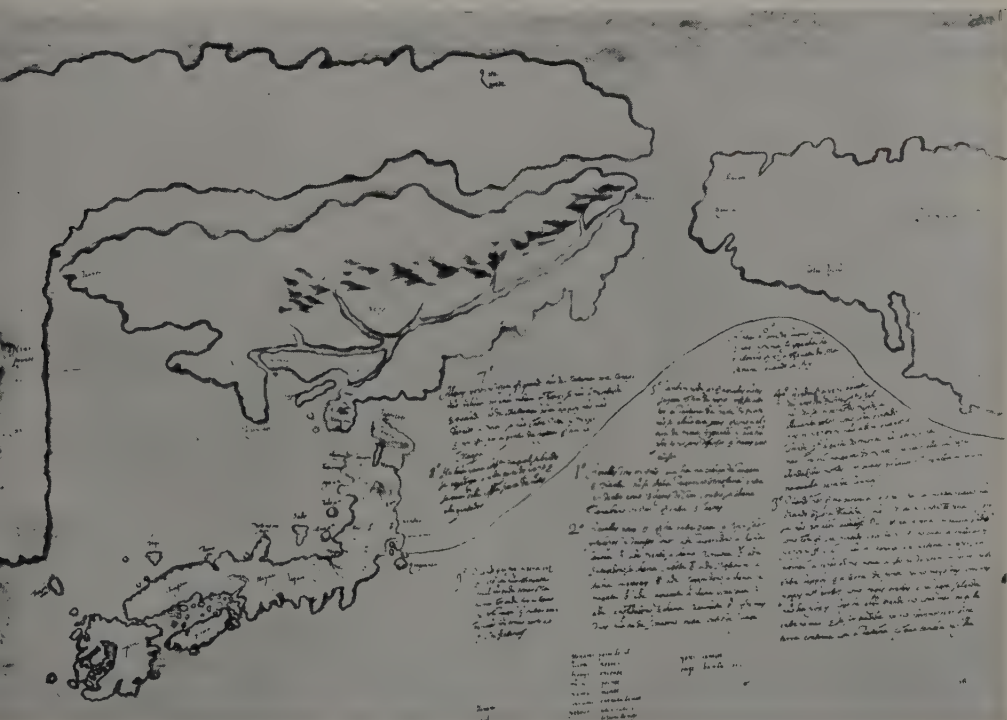


Fig. 3: right) The islands of Bohol, Mactan and Cebu in the Philippines, drawn by Antonio Pigafetta, who sailed with Magellan and whose journal is the most detailed record of the earliest circumnavigation. (East is at the top.) Magellan's crews were the first Europeans to reach the Philippines, which he named the Archipelago of St Lazarus. He concluded a treaty with the King of Cebu, and was killed in an attack on the island of Mactan in April 1521. The cross records his conversion of the people of Cebu to Christianity. Fig. 4: below) The Japanese islands and coast of South China, in a chart drawn by Vaz Dourado in Goa about 1573. At the mouth of the Canton River (bottom left) Macao is not yet named; while further north lie the estuary of the Yellow River and Nanking. For Japan, the cartographer could consult nautical charts and the reports of the Jesuit missionaries, who provided lists of towns and provinces, with distances. The Portuguese knew only the southern islands of Kyushu and Shikoku and southern Honshu; their ignorance of north Honshu explains the "turtle-backed" outline given to the group by Vaz Dourado and adopted by other mapmakers to the end of the century.





(Fig. 7: above) Map of the Pacific, drawn about 1580 by López de Velasco, showing the trade routes between Manila and Acapulco used by the Spaniards after their occupation of the Philippines in 1565. (Fig. 8: below) Map of the Japanese islands, drawn about 1621 by the Jesuit de Angelis, who was the first European to visit the northernmost island of Yezo (Hokkaido). Its size is here exaggerated





(Fig. 9) Nagasaki harbour (about 1665), with Dutch ships and Chinese junks. During the period of national isolation, Nagasaki was the only Japanese port where foreign ships were allowed to trade. At the bottom are foreign merchants: (left to right) Arab, Dutch and Chinese

Meanwhile the Portuguese had extended their trade along the coasts of China, where about 1557 their trading settlement of Macao was founded. In 1542 they reached Japan, and in 1571 set up a factory at Nagasaki, on the southern island of Kyushu. Ralph Fitch, returning to England in 1592, brought back from Malacca news of the Portuguese trade "from Macao in China to Japan", in "a great caracke which goeth thither every yere", bringing back Japanese silver in exchange for "white silke, golde, muske, and porcelanes" of China. St Francis Xavier, the "Apostle of Japan", had landed on Kyushu in 1549, and the reports of Jesuit missionaries furnished the principal materials for European maps of Japan for nearly 100 years, until the expulsion of foreigners from the country in 1641. The maps of the Jesuits, drawn from their missionary journeys and depicting the Christian stations in perhaps over-sanguine extension, were reproduced by official Portuguese cartographers, notably Fernão Vaz Dourado who worked at Goa from about 1568. The earliest European maps derived from this source gave the islands a "turtle-backed" outline (Fig. 4). Towards the end of the century, probably under the influence of native Japanese maps, the representation of Luiz Teixeira published by Ortelius in 1595 introduced a more correct outline for the main islands of Honshu and Kyushu but perpetuated their erroneous east-west orientation (Figs. 5, 6). Their relationship to the Chinese mainland and to Korea (often shown as an island) was not yet understood. The northern island of Yezo (now Hokkaido), inhabited by the Ainu, was first reported in a letter from India in 1548, but long remained unknown to mapmakers of the West and was not visited by a European until the Jesuit Girolamo de Angelis crossed from Honshu in 1615. The map of the island accompanying de Angelis' report (Fig. 8), however, had little influence on European cartography.

While the southern seaways to the East were dominated by Portugal and Spain, other nations sought alternative routes to the realm of the Great Khan. The instructions given in 1580 to Captains Pet and Jackman "for search and discoverie of a passage by sea... Eastwards to the countreys or dominions of the mightie Prince, the Emperour of Cathay, and . . . vnto the Cities of Cambalu and Quinsay" still recalled Marco Polo; but Dr Dee's "briefe advises" to them struck a more modern note, recommending that they "saile ouer to Japan Island where you shall finde Christian men, Jesuits of many coun-

treys . . . and perhaps some Englishmen". After the failure of their search for northern passages, English and Dutch adventurers, supplied with fuller intelligence of "the common and ordinary trade of the Spanyard and Portingall" to India, Molucca, China and Japan, turned to the routes already frequented by their rivals. In 1589 Juan González de Mendoza's work on "the great and mightie Kingdome of China", translated at Richard Hakluyt's "earnest request and encouragement", furnished Englishmen with their first authentic account of the country since Marco Polo. Six years later came Linschoten's sailing directions for the China seas, taken from Spanish and Portuguese rutters and charts. (See Article VI of this series, Fig. 13.) In 1588 Thomas Cavendish, returning from his voyage round the world, had brought home a "large map of China", no doubt taken from a Portuguese ship, and the information on this map was published by Hakluyt in 1600, together with notes on the eastern navigation, "such as hath not bene heard of in these parts," supplied by Cavendish, and with a dialogue "of the kingdome of China" printed at Macao "in China-paper" in 1590 and "intercepted in the great Carack called Madre de Dios two yeeres after."

The English East India Company, incorporated in 1600, believed that "the countries of Cataia and China" would "aforth a most liberall vent of English clothes and kersies", and woollen goods were carried in the Dutch ships that sought to extend their trade northward from the Archipelago into the China Sea. The first Dutch vessel to reach Japan, piloted by the Englishman William Adams, was one of a Rotterdam fleet that sailed in 1598 for the Moluccas by way of the Magellan Strait and was dispersed in the Pacific. The tale of the *Liefde's* voyage was told in letters written by Adams from Japan in 1611. After leaving Chile, the captain steered for Japan, hoping to find there a better market for his "woolen cloth" than in the "hot countreyes" of the East Indies, and in 30° N (i.e. nearly six degrees south of the true position) "sought the northernmost Cape [of Japan]; but found it not, by reason that it lieth faulce in all cardes, and maps, and globes". With the survivors of her crew disabled by scurvy, the ship was in April 1600 towed into a harbour of Kyushu and confiscated. Adams, a Kentishman who had served a shipbuilding apprenticeship at Limehouse, was employed by the Shogun in his craft, settled in the country, and married



(Fig. 10) China: this map was published in 1625 by Samuel Purchas from a Chinese original given to Hakluyt by Saris. Purchas added the portrait of Ricci and (he wrote) "the names of the Provinces I have hunted out of the Jesuites Journeyes and other Relations". Korea appears as a peninsula

a Japanese wife. He became the intermediary through whom both the English and the Dutch opened up trade with Japan: a Dutch factory was set up in 1609 at Hirado on Kyushu, and in 1611 the English company, learning from its factors at Bantam and from the Dutch that Adams was "in greate favour with the Kinge", directed its seventh and eighth voyages to Japan, with letters from King James I to the "Emperour". In June 1613 Captain John Saris in the *Clove* reached Hirado, where with Adams's help he established a factory and negotiated a trade treaty. Saris was not on good terms with Adams, whom he regarded as "a naturalised Japanner" and as too friendly with the Dutch; and Adams cited his treatment by Saris as his reason for refusing the latter's

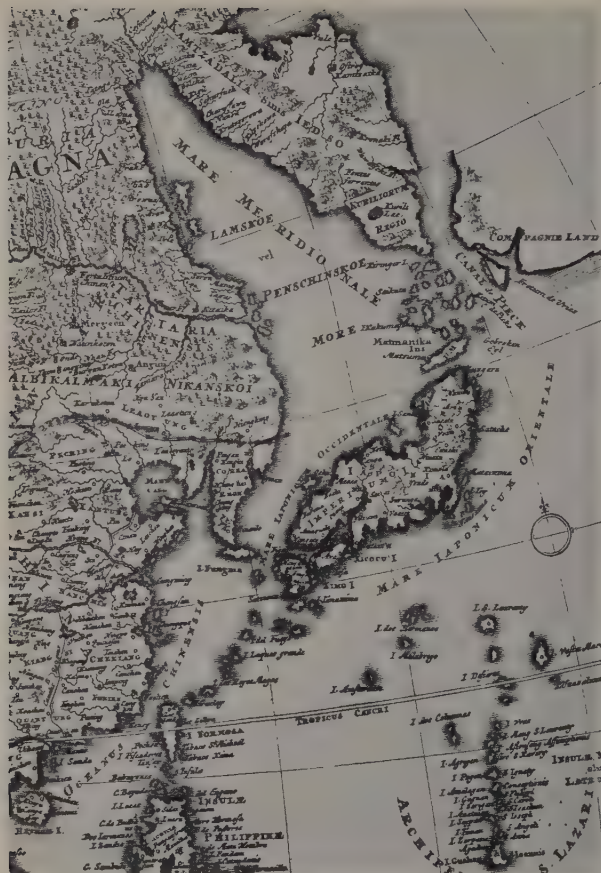
offer to carry him back to England. In a letter to the Bantam factory in 1613, accompanied by a "patron [chart] of Japan" (now lost), Adams had reported that cloth had become as cheap there as in England, the market being flooded by the Dutch and by the "ship from New Spain" (the Manila galleon). His forecast was justified by the failure of the English factory at Hirado, which was abandoned in 1623. Throughout the period of national isolation which, beginning in 1641, lasted into the middle of the 19th century, foreign trade with Japan, conducted through the port of Nagasaki (Fig. 9), was left in the hands of the Dutch and Chinese. It was in a Dutch ship that the German naturalist Engelbrecht Kaempfer in 1690 reached Japan, where he lived for two



(Fig. 11) The island of Amoy, off the coast of Fukien, from a chart drawn about 1690 by Captain John Kempthorne, commanding a squadron of the East India Company. The chart shows the English factory established in 1676, between the "Kings Palace" and the town, and soundings round the isle. Amoy, with its magnificent harbour, was a centre for Chinese trade with Formosa and the Malay Archipelago

(Fig. 12) Map of the road to Yedo (Tokyo), by Engelbert Kaempfer. In 1690 Kaempfer accompanied the annual embassy of the Dutch East India Company to Japan, where he remained for two years. The map shows the route by which the embassy travelled from Nagasaki to the Emperor's court, with (at the top) Fujiyama, which—wrote Kaempfer—"help'd me not a little in drawing and correcting the map"





(Fig. 14) North-east Asia: a map of about 1720, illustrating the confused ideas on the geography of lands north of Japan that prevailed prior to the expeditions of Bering

years collecting materials for his *History of Japan*, published in 1727 at London after his death (Fig. 12).

Along the China coast neither England nor Holland established a basis for regular trade until Portugal's stations on the Indian Ocean and in the Archipelago fell to the Dutch. There was no lack of projecting after 1600. The earlier material had not lost its value, and on his return voyage from Japan in 1613 Saris noted that "wee found Ian Huijghen van Linschotens booke very true, for thereby we directed ourselves from our setting forth from Firando [Hirado]". Samuel Purchas, editing in 1625 "Master Hakluyts many yeeres Collections, and what stock I received from him in written papers", added

reports of the English and Dutch companies' voyages, with many documents on the East collected by them, including Adams's letters and a map of China "in the Chinish language" (Fig. 10), the original of which "was by Captaine Saris . . . gotten at Bantam of a Chinese" and given to Hakluyt. From 1624 the Dutch had a factory on Formosa, and their capture of Malacca cut the communications between the remaining Portuguese bases of Goa and Macao. The English company saw the opportunity to take over the Portuguese carrying trade between India and China; but not until 1676 did it succeed in establishing a factory at Amoy, opposite Formosa (Fig. 11). Annual voyages were made along the coast to the north as far as Chusan, and the foundation of the great English tea trade with China was laid by the Canton factory established in 1762.

The geography of the lands to the north-east remained obscure alike to Chinese and Japanese and to European mapmakers until the 18th century. Yezo had been correctly described as an island by Saris, quoting a "Japanner", and by de Angelis (Fig. 8); and it was so delineated in the maps of the Jesuit fathers Matteo Ricci, who established the Peking mission in 1601-10, and Martino Martini, whose atlas of China, drawn from native Chinese maps, was published by Blaeu at Amsterdam in 1655. Their Chinese sources

knew nothing of Sakhalin, the Kuriles or Kamchatka. To the north of Yezo, or "Jesogassima", Kaempfer described "the Continent of Okujeso . . . that is upper or high Jeso". By this he meant Kamchatka, of which he obtained vague reports from Japanese pilots; and he referred to Japanese as well as European ignorance regarding "the full extent of the Eastern Coasts of Siberia, and the great Tartary" and the "relation which they bear to the neighbouring continent which is probably that of Okujeso". Geographers, he added, could not yet determine whether Okujeso "confines on Tartary or America, consequently where they are to place the streight of Anian, or the so long wished for passage out of the

R. Paken

R. Tustaja

R. Podkajerna

R. Lesnoja

R. Pallan

R. Uaccwulku

R. Kigoll

R. Uscula

R. Kanran

R. Kariogawa

R. Moroserna

R. Compukowa

R. Sogorna

R. Colasa

R. Zuvier

R. Krutagorow

R. Wancanell

R. Wiprosches

R. Kol

R. Wicna

R. Jura

R. Anatsiga

Belcherzku Otray

Kuril

Kamtschatka

Kamtschatka River

Bering Sea

Japanese Archipelago

Chingiathe

Brechen Berg

Wicchna Otray

46-1

ander welse bis nach 11

fa pan sich erstrecken

The most fruitful voyage in these waters during the 17th century unhappily added to the confusion of mapmakers and led to a retrogression in knowledge and interpretation of northern Pacific geography. Rumours of earlier landfalls to the north-east of Japan led the Dutch authorities in Batavia to despatch two expeditions, the first under Matthijs Quast and Abel Tasman in 1639, the second under Maarten Vries in 1643. Vries sailed along the east coast of Yezo, passed between the two most southerly Kurile Islands, which he named "Staten Land" and "Compagnies Land", and reached the southern end of Sakhalin, missing the strait to the south of it. The misunderstandings created by his reports and charts (Fig. 13) illustrate the errors into which an accurate but discontinuous coastal survey may betray cartographers. Yezo and Sakhalin were drawn as a continental promontory of Asia; and, although Kaempfer, writing of "Jeso or Jesogassima . . . the most Northern Island", correctly concluded that "the Country discovered by de Vries, to the North of Japan, was part of this Island", the misconception persisted well into the next century. Moreover, Vries's representation of "Compagnies Land", to the east of his track, suggested a continental connection with America.

ing Asia and America (Fig. 15), and the exploration of the waters between Japan and Kamchatka by the Frenchman La Pérouse in 1787. The results of Bering's explorations only became slowly known, but a map of his discoveries was published by d'Anville in his *Nouvel Atlas de la Chine* (1737). D'Anville's maps of the Chinese provinces were derived from the great surveys extending over the whole Empire, made by Jesuit fathers for the Emperor Kang-hsi between 1708 and 1716; printed editions of their maps were produced by the Jesuits at Peking and brought to Europe. This atlas is a landmark in European knowledge of the Far East, and remained the standard authority on China during the 18th century. (See Article VI of this series, Fig. 15.)

The Arab Legion

by STEWART PEROWNE

After twenty-four years in the Colonial Service, seven of which were spent in Palestine, Mr Perowne retired in 1951 and is now engaged in assisting the Anglican Bishop in Jerusalem to build villages in the Kingdom of Jordan for Arab refugees from territory controlled by the Republic of Israel. His recent book The One Remains tells of life in Jerusalem as it is today, and of its long past

It is related that one day in the year 1920 a very exalted Person said to Captain Peake of the Duke of Wellington's Regiment, who had commanded a detachment of the Egyptian Camel Corps during the Arab Revolt: "Go over to Trans-Jordan, and establish law and order"; and that Captain Peake replied: "Sir, I can establish either law or order, but not both." In the event, both were established, where for so long neither had existed. Today, in the Kingdom of Jordan, into which Trans-Jordan has grown up, internal security is as good as any man or woman may wish.

And it is the Arab Legion which first and foremost has helped to make it so.

In 1920 the little state of Trans-Jordan had just been created. It was bounded on the north by Syria, from which the French had evicted Feisal, the third son of the Sherif Hussein, the Ruler of Mecca and Father of the Arab Revolt; on the east and south by the Hejaz, of which the Sherif had now proclaimed himself king, with his eldest son, Ali, as Crown Prince, and on the west by Palestine. The ruler of the new Principality was to be Abdullah, the second son of King Hussein. The country itself was a fragment of the now dissolved Turkish Empire: it seemed to belong to no-one; and the task of making it into a stable state would be difficult indeed. It was fortunate in its first ruler. The Amir Abdullah was a remarkable man: he had been brought up largely in Constantinople, so that he was perfectly at home in the atmosphere of a great capital and could meet statesmen on their own ground, and poets too. He spoke both Arabic and Turkish with arresting distinction, he possessed largely the grace of manner and charm of address that are the heritage of his ancient and royal house. With all these accomplishments, he nevertheless remained a son of the desert at heart: in the summer he would leave his palace in Amman, and pitch a tent on a hill near by, where the Arab Legion training camp now stands, and thence conduct the affairs of his Principality.

When the Amir went to Trans-Jordan, he decided to make his capital not at Salt, the former Turkish administrative centre, but at Amman, the Rabbah of Ammon of the Book of Samuel, beneath the walls of which Uriah the Hittite met his death. For a time, the city had been called Philadelphia, after the Second Ptolemy. But with the decay of Byzantium it had reverted, like so many other Semite towns, to its original name. It shrank to a mere village, and when Abdullah made it his capital it was a poverty-stricken settlement of Circassians and Chechens, imported by the Turks in the vain hope that they would overawe the unruly tribes who roamed the surrounding countryside.

It was a bold move of the new Ruler to establish his capital so near the desert, so far, it seemed, from security. But Abdullah was a far-sighted man, and he knew his people: he would make them discipline themselves; and so the Arab Legion was formed.

Its Arabic name is the Arab Army, and it was deliberately chosen to perpetuate the force which had done so well during the war; but since in English "Army" might sound too grandiose for so small a force, the word Legion was used instead.

The Force was small; only a hundred to start with, increased to a thousand the next year. But it was born with a tradition, and a tradition that went back not merely to the war, but to the great heroic ages of the first Arab Conquests. Peake knew that only the Arabs could induce Arabs to prefer order to chaos, and Peake knew how to appeal to the Arab sense of style, which is one of their strongest characteristics. He was a commanding and original figure, besides being an imaginative and resourceful soldier. In the field, Peake would plan and lead the attack. Back in the capital, he was often to be seen driving through its streets, sitting alone with his arms folded across his chest, in the back seat of an ivory-coloured open touring-car, with a silver peacock on the radiator cap. He wore the Arab head-dress, only he wore two kerchiefs instead of one. Peake had *panache*.



B.I.P.

The Arab Legion central training camp: the Abdali Barracks on the western outskirts of Amman. The main road from Jerusalem lies immediately beyond the barrack buildings. Farther away, along the lower edge of a line of wood, is the wall of the citadel of the Seleucid Philadelphia (3rd century B.C.), built on the site of Rabbah of Ammon beneath which Uriah the Hittite met his death (2 Samuel xi, 17)



B.I.P.S.

The Arab Legion has always been recruited predominantly from the Arabs of the desert. They have preserved through the centuries the original Semitic type such as is represented on the monuments of the Pharaohs. With this physical conservatism has always been associated an instinctive curiosity about, and a faculty for adaptation to, what is modern and interesting. (Above) There are no barbers in the desert and Arabs have for long worn their locks rather as Milton pictured Adam. But, as in the West, for military purposes a shorter haircut is necessary. (Opposite, top) "Hawk-eyed" is no misnomer for the desert Arab, who can often see farther with the naked eye than others can with field-glasses. (Opposite, bottom) Recruits drilling: they obviously like it



B.I.P.S.



B.I.P.S.



I.P.S.

An Arab Legion barrack-room : for many desert Arabs sleeping in beds is a novelty. The soldiers wear Western uniforms but retain their traditional Arab head-dress, the kerchief and twin rounds of black rope which were adopted by the Crusaders and reappeared as the "mantling" or "lambrequin" and "wreath" or "torse" beneath the crest in European heraldic achievements

Pride in their appearance is encouraged among the men of the Arab Legion and a few strategically placed looking-glasses help them to maintain it. The inscription over this one reads: "Is your dress complete and is your appearance right?"

B.I.P.S.





Robert Young

Lieut-General John Bagot Glubb, usually known as Glubb Pasha, Chief of General Staff, Arab Legion, is seen here with one of his sergeant-majors, a mainstay of the Legion's high discipline who wears the somewhat disillusioned look of his counterparts in other armies. They are in the tent of a Sheikh (sitting between them) whose tribe has supplied many recruits to the Arab Legion



B.I.F.

The Arab Legion's Officers' Club at Zarqa. Zarqa means blue ; the name comes from the waters of the river which flows through the swimming pool. Once a week the club is thrown open to men of all ranks and their families. To the Arab, his race is a source of pride, without prejudice : he 'mixes' easily. Rank is respected because it is of God ; and so is brotherhood, for the same reason



I.P.S.

A desert patrol of the Arab Legion returning to one of the outposts which is on the site of an old Roman frontier fortress, Qasr Azraq. They are riding camels but the well-worn tracks in the vicinity of the fort are evidence of the activity of the Legion's motor patrols. Patrols and fort maintain wireless communication with each other, and with headquarters in Amman

His Force was a police force and gendarmerie combined. Its duties were twofold. First, the Legion had to create internal order and respect for law, which had been practically unknown. The Turks had made only half-hearted and spasmodic attempts to control or tax these wild individualists. In fact, Trans-Jordan at the beginning of the present century resembled Palestine three thousand years earlier when "there was no king" and "every man did that which was right in his own eyes". Gradually the Amir and his Legion, aided by a handful of patient, honest Britons, established not only order, but the rule of law as well.

There remained the second problem, the frontier.

The Romans had created, east of the Jordan, a definite, fortified frontier, or *limes*, which ran roughly along what is now the line of the Hejaz railway. This frontier was guarded, patrolled and maintained inviolate for nearly 700 years. In A.D. 614 the Persians had overthrown it. Never since, until the coming of the British in the 20th century, was this frontier to be remade. Its restoration took some time, almost a decade in fact. The work was shared between the Royal Air Force, the Arab Legion, and an imperial corps, the Trans-Jordan Frontier Force. This last was under the control of the British War Office, and should not be confused with the Amir Abdullah's Arab Legion. The Trans-Jordan Frontier Force was disbanded in 1948.

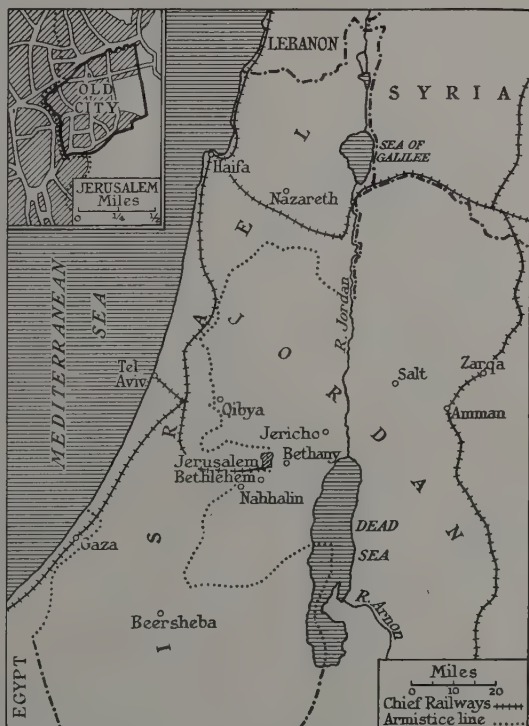
Not only did the Arab Legion help in the historic task of restoring the frontier; it undertook to pacify the tribes far out in the desert, miles beyond the line of the old Roman frontier. For this task, Major John Bagot Glubb, formerly of the Royal Engineers, who had shewn in Iraq his aptitude for pacifying and conciliating frontier tribes, was chosen in 1930. He instantly made a success of it. Like Peake, he knew that the only people who can control Arabs are Arabs. He raised his now-famous Desert Police from among the very tribes whose restlessness had made the force necessary. By the end of 1932, border raiding had completely ceased, the tribes were

grateful for the novel experience of peace, and the Desert Police became the favourite sons of the Principality.

The Legion was soon to have an opportunity to shew its mettle on an ever-widening scale. First came the Arab rebellion in Palestine. A Legion of only 1000 men not only kept unbroken tranquillity in Trans-Jordan, but in 1938, when the rebels, now desperate, sought asylum in the wooded hills of Gilead, the Desert Police rounded them up.

When World War II broke out in 1939, the Amir Abdullah placed his army and his whole resources at Britain's disposal. He himself longed to be in the fighting line. He told me once in the dark days before Alamein that, with his knowledge of the desert, he was sure he could be of help to those who were planning the counter-stroke. He was a great chess-player, and he had made a special set of chessmen, composed of 'tanks', 'parachutes' and so on, so that, as he said, his court should be taught the terms of modern warfare.

And his Army did see action. First, against the Nazified clique of traitors who were



A. J. Thornton



Robert Young



Robert Young



Robert Young

(Opposite, top) A troop of mounted police riding greys at the Arab Legion's annual parade; the King is at the saluting base. (Opposite, bottom) The colour party of a regiment of motorized cavalry. Their symbol and mascot is a hawk. The Arabs are keen falconers and the sport of hawking is widely practised among them. (Above) A piper of the Arab Legion Pipe Band. The pipe is familiar to the Arabs not only on account of its scale but because from their own reed flute and chanter they can produce a sound not unlike that of the bagpipes. They breathe in through their noses, using their cheeks as the bag, and thus produce a continuous noise on the flute by blowing through their mouths



Courtesy of the Arab Legion

A soldier of the Arab Legion instructing a group of National Guards in a Palestine village. The notice pinned above the blackboard says: "While I remember, I will not forget thee O Palestine"

trying to unseat his cousins, the Prince Regent Abdulillah and the infant King Feisal II of Iraq. Later, they turned their attention to the Vichy renegades in Syria. How well I remember the hope, relief and confidence that the victorious campaigns of this Arab Army inspired in their British allies in those critical days. From that period dates the international reputation of the Legion. During the war, when the Levant was crowded with the soldiers of a dozen different armies, it was always possible to distinguish the Arab Legionnaire, simply by his bearing. He was proud of his race, his achievements and his fidelity. Throughout the war, it was to this army that tasks requiring fidelity were entrusted, the guarding and delivery of millions of pounds' worth of stores and equipment. In the hands of the Legion they were safe. And so were the inhabitants of the lands in which they worked. There was not a single case of encroachment or interference with the local population. This record was unique,

certainly for that epoch and area, as those who served in it well know.

Peake had retired in 1939, six months before the outbreak of war. His natural successor was Glubb. Peake had created the Legion and commanded it for seventeen years. Glubb has commanded it ever since. It was Glubb who had organized the war-time campaigns, and it was the Amir and his general who jointly inspired the *élan* of the Legion. In 1946, Trans-Jordan became a kingdom, and the Amir, King Abdullah the First. It was a fitting climax to the life and work of that great ruler, inflexible friend, and most royal gentleman.

When, on the abandonment of the British Mandate in 1948, the war broke out in Palestine, the Legion played its distinguished part in defending the homeland. It was never defeated in battle. It lost only fourteen prisoners, twelve of whom were in a hospital. It is due to the Legion, primarily, that so much of Palestine still remains in Arab hands.



Robert T.

Arab Legion soldiers on guard in the ancient Citadel of Jerusalem. Beneath its walls to the west lies the narrow strip of no-man's-land and, beyond, the city's Israeli-held western suburbs

Now, it is the western frontier of the Kingdom of Jordan, which includes all former Trans-Jordan, and the Arab portion of Palestine, that they guard. "Frontier", though, is a misnomer: the line they guard is but the flimsy truce-line of 1948. But they guard it well. It is the Legion that stands between the inhabitants of the "frontier villages" and massacres at Zionist hands such as those at Deir Yassin, Qibya and Nahhalin, and that protects them from armed aggression such as periodically subjects Jerusalem itself to small arms and mortar fire from the Israeli-held western suburbs.

In this task the Legion is now assisted by the National Guard, a force raised from the inhabitants of the villages, and equipped, trained and disciplined by the Legion.

The Legion has always been a voluntary force, almost alone of armies in the Middle East. It still is. It still draws its strength from the vast reservoir of the desert, from the tribes of the East and Deep South. In the West, ser-

vice in the National Guard is compulsory, and a necessary preliminary for enlistment, so eagerly competed for, in the Legion itself. The Legion now contains men from both sides of the Jordan. There is room for all, because in the modern Legion many different skills are needed. Besides the army, the Legion is also the Navy, the Air Force and the Police. The Navy patrols the Dead Sea, through the southern end of which the truce-line runs. It guards the famous hot-springs of the eastern valleys; it guards that mysterious and almost unknown gorge of the Arnon river, a veritable marine Petra; it guards the now-famous caves in which the Dead Sea scrolls were found. With their usual cheery adaptability, the Arabs have taken to the sea with a will. As one of the sailors said recently, during a rather choppy passage: "I love the Sea, were it not for the waves."

The Jordan Air Force may be said in a sense to have started with Peake. In the late twenties, Peake decided to take up flying. It

would make his inspections easier, he told the government, and more efficient too. As things were, whenever the peacock-crowned motor-car was seen heading for a particular post, the wireless began to buzz, and a code-word "*Ghayamit*", which means "It is cloudy", would warn the victim. The aeroplane, which Peake piloted himself, restored the element of surprise to military life. But in our own time it is King Hussein, the grandson of King Abdullah, who leads his Air Force. He is only nineteen, but he is a keen pilot, and recently inaugurated the new civil airport at Amman by making a perfect landing on it in his own plane.

The Police Force was always a component of the Legion. It is now a very important section of it. The combination of military and police forces under a single command is contrary to all the approved Western principles of government, and it works perfectly. Security in Jordan, both on the east bank of the river and on the west, has never been better. When account is taken of the half-million impoverished refugees who must perforce live in close proximity with their more opulent fellow-citizens, this achievement is all the more remarkable. The towns are policed by car or on foot, the countryside by the mounted patrols, whose animals are the envy of every horse-lover.

Once a year the Arab Legion is reviewed by the King. The pageant takes place in a plain near Amman. All the branches are there: the camels, the cavalry, the infantry, the National Guard, the artillery, the mechanized infantry, the Police, and the Legion's famous Pipe Band. It is a curious fact that the musical scale of the Scottish bagpipes, with its flattened leading-note, is the same as the Arab scale. On the ear of the Bedouin, therefore, the airs of Scotland fall with a familiar cadence.

It is a brave, brilliant sight, curiously poignant, this review. It touches the heart to see this array of valiant men, so proud in their bearing, so confident of their ancestral tradition and of their capacity to maintain and enhance it, as, wave upon wave, they glitter past their King, their colours bright against the khaki hills. One troop of mechanized cavalry has as its badge a hawk; but it is no painted symbol that they carry with them: it is a live hawk on the fist of a desert falconer turned gunner; and amid all the streamlined equipment of this modern army, nothing is so lithe and alert as that beautiful bird.

The army are always ready to help the

civilians among whom they are stationed. Their tank-waggon provide water for villagers whose cisterns have run dry; and the desert tourist finds not only a welcome in the Legion's outposts, but help and guidance from the patrols who have been warned by wireless to look out for him. Recently two of the Legion's wireless cars helped to site the houses of a model village, which the Anglican Bishop is building for refugees with money contributed by the American Trans-Arabian Pipeline Company. The houses are to be very conspicuous from the main Amman-Jerusalem road, just below Bethany. It was important to site them so that they would look right. The army provided two radio cars, one of which was placed on the site, the other on the high road across the valley. Back and forth flew the instructions, in high-piping Bedouin Arabic. The operators grinned while they transmitted "five, repeat five" as "the fifth, I say unto thee, the fifth", in their ancient and so modern tongue.

Well may the people of Jordan, and the Arabs in general, take pride in their Arab Legion. And well may Britons, too.

In days gone by, when there was a European Army, assembled by the Knights of the Venerable Order of St John of Jerusalem, its governors, in order to preserve balance and harmony between the *langues* or nations that made up the Order, agreed that certain offices should invariably be assigned to certain languages. To the English was always committed that of "Turcopolier", or General of the local forces. Even in those days the English had shewn their aptitude for sympathy with soldiers of other races combined with enthusiasm for their traditions and excellences. In our days, Peake and Glubb, the two Britons who have in turn guided the Legion during the thirty-four years of its life, have proved themselves among the great Turcopoliers, the last of them, perhaps, but certainly not the least.

Mr Byroade, then American Assistant Secretary of State, was reported on June 15 of this year as having praised the Arab Legion as a "factor of stability" in the Levant. A fortnight later, just as the crescent moon was sinking over the western suburbs of Jerusalem, I stood on the amber-coloured ramparts of Herod's Citadel. Over the very stones on which the soldiers of the Tenth Legion had tramped, to preserve the *Pax Romana*, two thousand years ago, the sentinels of the Arab Legion were mounting guard over the still Holy City. As I watched them, I knew that Jerusalem was in good hands.

An Old Irish Estate Map

by G. C. DUGGAN

ESTATE maps of the 18th century are not common for the remoter parts of Ireland. The surveyors who undertook the task had not the help of Ordnance Survey maps and in addition to the actual mapping they were expected to supply information as to the nature of the soil and furnish estimates of the rental value of individual farms.

That an intelligent surveyor did not confine his duties to the mere application of trigonometrical tables is obvious from a study of the Estate Map I have before me. It was prepared by the firm of Seale, Sherrard and Browning (presumably of Dublin) for the 6460-acre estate owned by Edward Madden at the south-eastern end of the County Fermanagh marching on north County Monaghan. It is dated 1777, and a preliminary note written in the fine copperplate hand which is a feature of all the maps makes no attempt to blunt the stark details of the scene:

The Manor of Slutmulrooney is situated four miles North of Clones, a Market Town. It is in general an indifferent tract of ground being for the most part a cold light soil and subject to floods. A multitude of lakes and rivulets deriving from the mountains form and empty themselves into one principal river which for want of an adequate fall rises at excessive rains and overflows all the adjacent parts. The meadowing throughout this Manor is poor, scarce and precarious insomuch that in many farms the cattle are obliged to feed upon oat straw during the winter months.

Husbandry throughout this entire Manor is low and dispirited. Lime tho' convenient as to its situation is not used here or manure. The tenants, some because of the uncertainty of their

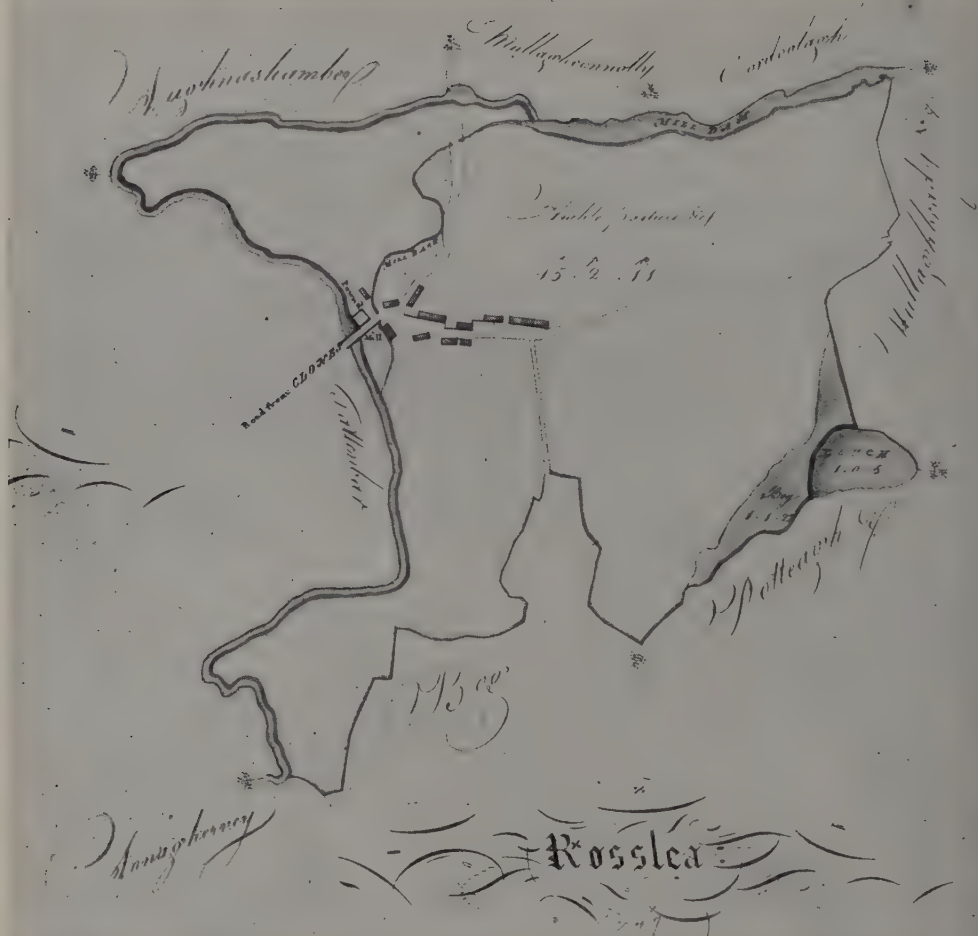
tenure and others by poverty, are disheartened from attempting the expense of cutting drains which should be deep and numerous. Even where the ground is occupied by the plough, oats are almost the only grain produced. In some parts there are small quantities of barley but as for wheat or any species of winter corn they are utterly unknown. Tillage is exceedingly tedious and laborious, the Husbandmen being by reason of the wetness of the soil forced to substitute the spade for the plough and are also frequently necessitated to cover the seed with a hand rake. The rents appear to be chiefly made up by flax and yarn, indeed the inhabitants of the mountains are said to experience some little help from a produce of butter in the Summer season.

Mr Madden has been very active towards the encouragement of agriculture and improvement of the Estate. Besides a new road of about three miles which opens a communication with the high road to Clones about five miles distant, he has at a very considerable expense built a bridge over the River. The number of bogs in the country are superfluous and they are in general adjoining loughs and their surface rising no higher than that of the water, without any inclination or fall to assist their draining, the reclaiming of them appears impracticable.

The generations that have passed since 1777 have won first fixity of tenure and finally ownership of their farms and these benefits are reflected in the improvement of the land to which enlightened state aid has more recently contributed, but even today much of it falls under the term "marginal land". Over it hangs the shadow of the flight of the young, threatening the neglect that the old alone cannot stem.

The Estate Survey is subdivided into





seventy townland maps and nine bog areas varying in size from 19 acres to a mountain stretch of 500 acres. The yearly value is estimated at £1036 19s. 10^d. The valuations are so meticulously calculated that farthings are quite common. The land is divided into "profitable" and "unprofitable", the latter being about one-sixth of the whole. Bog areas are regarded as of no value. Contours and heights are not shown. Each map, drawn in indian ink, is lightly washed-in with pale water-colours; the embellishments are drawn with a brush in ink and there is an elaborate formal title-page.

The demesne land of 214 acres lay at the

southern end of the estate and the surveyor found it simple to use it as his starting point, working his way northwards in zig-zag fashion up to the mountainy land which marched on the estate of Sir Arthur Brooke, an ancestor of the present Lord Brookeborough, the Prime Minister of Northern Ireland. He is the only representative of the landlord class that still retains any connection with the locality. The other adjoining landlords have gone. Lord Massareene has long retreated to Antrim. Mr Whitesides and Mr Grant have vanished and Richard Dancy Esquire has not been saved from oblivion by his more aristocratic appendix. (How did the

surveyor decide between a mere "Mr" and an "Esquire"? Lord Dacres has lost his peerage and Eccles Esquire, whose lands rounded off those of Madden and Brooke, is no more.

The surveyor is not neglectful of the respect due to his employer. In copperplate script the Spring Grove demesne map tells us that "Mr Madden has built an exceeding good house on his demesne with suitable offices etc. The land has at great expense been well improved, planted and divided, being naturally wet, poor and scrubby. It is at this moment however a most agreeable country residence"—and then he bluntly adds "15/- per acre."

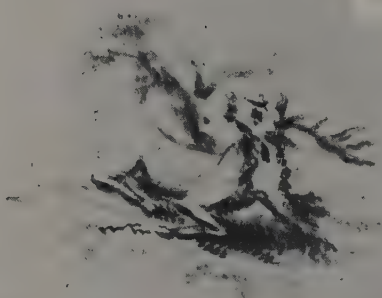
The manor house was burnt down accidentally in 1885 and never rebuilt, the family moving to a smaller house in County Monaghan a few miles away. In 1925 on the sale of the estate to the tenants the demesne land and some adjoining farms passed into the hands of the Northern Ireland Forestry Department which has cleared away the last of the old timber and replanted the whole demesne. The more imposing title of "Rosslea Manor" given to the house about 1850 never caught on. The

old name of Spring Grove alone survives.

The survey of each townland contains a note of the value of the soil and its estimated letting value per acre. A poor 54-acre farm, stony, wet and coarse, is valued at 2s. per acre. A farm of which the soil is "pretty good" (the adjective seems very colloquial for the year 1777) is valued at 3s. 6d. Common phrases are light soil, rough, scrubby, liable to floods. Wet, boggy and almost barren, or stock farm, heathy and coarse grass, are applicable to the mountain farms whose valuation is put at figures ranging from sixpence to 1s. 2d. an acre. The average runs at about 3s. 6d. Here and there improvements such as the clearance of furze are mentioned.

The normal map scale is 20 perches to the inch: for the mountain areas, 40 perches. All natural features such as lakes, rivers or islands in the middle of curraghs are shown and those that are the work of man such as roads, bridges, houses, a Chapel of Ease, limestone and gravel quarries are marked with accuracy. Today, with its population diminished by the famine years and emigration, many of these houses have mouldered away.





The little village of Rosslea, near Spring Grove, with its twelve houses, comes in for special mention. Its presence and the Manor Mill on the river (the Finn) that runs by the village are said to enhance the value of the neighbouring farms to the tune of 10s. an acre. The mill is still there but only for sawing timber and the pound marked on the map is today an enclosure for the cattle that have changed hands at the monthly fair.

The Deer Park calls for the artist's best effort. Look at Diana lightly clad for the



chase: "Mr Madden has enclosed this park at a very great expense with a stone wall. It is entirely pasture or very wet, coarse and poor. It produces only some scrub and bad bottom and is wholly occupied by deer." Its boundary walls have now crumbled away.

Fully as interesting as the mapping is the artistry exhibited on every sheet, figures or emblems worked into the arrow whose head points to the south. Some of these embellishments are purely formal such as ornamental urns, a mirror, a silver tray, stereotyped floral or fruit designs. One wonders what decided the selection of the head of a winged cherub for the map of a bog held by tenants in common, or why a painter's palette (save as an adjunct of the surveyor's craft) should adorn the outline of a mountain farm. The smitten deer, the trumpet, spear and sword are elements of fancy and the antlered head with chain pendant seems pure heraldry. But for most of these embellishments I like to picture the surveyor of nearly 200 years ago wandering over these stricken fields and in the tedium of his daily task sketching in his notebook some passing sight of bird or animal so that he might transfer it in more finished form to these sheets that lie before me. Here is a wild duck in flight or a heron with lifted beak, a horse lies sunning himself with his back turned to us, and a badger stands at gaze. There are two sketches of donkeys whose descendants you may still see on the high moorland—there they stand, changeless in

their eternally enigmatic pose. On some rocky knoll on the mountain he has seen a goat silhouetted against the sky, and the stunted oak tree whose Gaelic name lives in more than one of these townlands, including the 800-foot-high Eshnadarragh—the waterfall of the oak trees.

As the surveyor took the measurements of each farm and sketched in their poor houses situated now in isolation, now clustered in some sheltered dip, he watched the tenants working on their holdings and as he spoke to the women spinning linen on their rough-made wheels, he sketched the distaff that held the tow or the heather-made brush that stood in the corner of the hearth, the farm tools, the "Rosslea" spade as it continues to be made locally today, narrow and slightly dished, the wooden hay-rake, the reaping-hook, the two-pronged hay fork, the flail with which they thrashed their tiny yield of oats—all appear in these pages. They were then just as they appear in the present-day illustrations in Dr Estyn Evans' *Irish Heritage*.

The unknown surveyor has only left us the yield of his pencil, but doubtless he too harvested the same beauty of these great stretches of moorland strewn with autumn heather as one can reap today, the endless little lakes still and blue, or rippled with windy gusts, the far-stretching land below and towards the west the mountains of Leitrim or Donegal, or eastwards on a clear day the Mourne that watch the Irish Sea.

São Paulo

by J. L. ALEXANDER



B.I.P.S.

In this, the 400th year since São Paulo was founded, the author takes stock of its astonishing achievement as the greatest industrial city in Latin America, with a population that has more than quadrupled in thirty years, and of its prospects in relation to the State of which it is the capital, as well as of the remarkable qualities that characterize its heterogeneous people

ON Easter Sunday in the year 1500, two years after Columbus's discovery of the American continent, a Portuguese fleet of thirteen ships, manned by 1500 men, and under the command of Pedro Alvarez Cabral, sighted the coast of South America. Cabral landed and claimed the territory for Portugal, naming it Santa Cruz; he and his countrymen believed it to be an island. They found no gold, silver or precious stones, and the King of Portugal was unimpressed by a land which seemed to offer little more than exotic birds and plants and the red dye extracted from a tree known as *braxile* or *pau-brasil*.

Before long the new territory came to be called the *Brasils* and the name Santa Cruz was forgotten. Gradually as they navigated southwards along the coast the Portuguese realized that this was no island but a vast continent. Foreigners, especially the French, began to plunder the new possession. The King in Lisbon awoke to the fact that he was in imminent danger of losing the *Brasils* and ordered an expedition to establish colonies

and garrisons some thirty years after Cabral had claimed the territory in his name.

The first voyagers set up a fort and station at Salvador de Bahia in the north, but the oldest official settlement was founded by Martin Afonso de Souza in 1532 at São Vicente, near modern Santos. One of the world's great ports, Santos is the main artery for the city and State of São Paulo, which between them are the mainstay of Brazilian economy. This year the city which has grown to be the greatest industrial metropolis in Latin America is celebrating the 400th anniversary of her founding. The year-long series of festivals and exhibitions make her the focus of commercial and cultural organizations from all over the world.

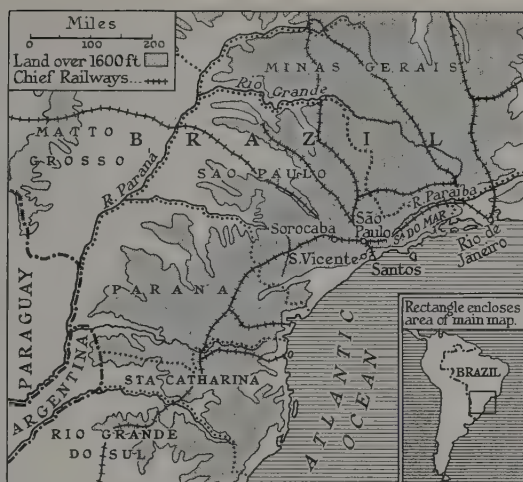
On January 25, 1554, the feast of St Paul, the Jesuit fathers Manoel da Nobrega and José de Achieta opened a little mission station in the highlands above the fever-ridden swamps around São Vicente and dedicated it to the Saint. Their work lay among the Guarani Indians who inhabited the forest-

covered plateau that stretches from the Serra do Mar to the Paraná. The mission, situated in a territory which had been one of the only two Captaincies to prosper out of the fifteen into which Brazil was divided between 1534 and 1549, grew rapidly into a town and a base from which the intrepid Jesuits and fortune-seekers from Iberia penetrated further into the interior.

Most of the adventurers who came to the temperate zone of the São Paulo highlands were from southern Portugal. They were a restless and energetic breed—the *bandeirantes* who pushed westwards across the trackless *sertão* (semi-desert) and dense *matto* (jungle), as far as the Paraguay and northwards to discover in Minas Gerais the gold for which they scoured the unknown and suffered incredible hardships.

The Christian purpose of the founding fathers, the Indians whom they won for the faith and the isolated missions which the Society of Jesus bravely established with no other weapon but the Cross, suffered terribly at the hands of the *bandeirantes*. Nevertheless they handed down a legacy of enterprise and vitality—an ability to overcome all obstacles—which characterizes the Paulistas to this day.

"Independence or Death!" Dom Pedro proclaiming Brazil's independence, near São Paulo in 1822



A. J. Thornton

The fact that no El Dorado was found within its borders proved, in the long run, São Paulo's salvation and determined the economic and social development that has led to its unrivalled prosperity. It offered no quick way to wealth in those early days and those who settled had, of necessity, to turn to the land for a livelihood. Hard and steady toil and a bracing climate conditioned a breed that is without equal for industry and achievement in Brazil.

Throughout the 17th and 18th centuries



By courtesy of the Brazilian Government Trade Bureau



Armin Haab

"Climate, the coffee bean and the type of immigrants who came there combined to make São Paulo what it is today." (Above) Its inhabitants are of many races, with Italians, Portuguese, Spaniards and Germans in the majority; it is a city without racial or national prejudice. (Below) Drying coffee on a fazenda

By courtesy of the Brazilian Government Trade Bureau





Looking towards the Triângulo, São Paulo's business centre. Four hundred years ago this year Jesuit fathers founded a mission station on the highlands above São Vicente: from it this great city—the third largest in Latin America—has grown



rmn Haab

A view across the Alto do Serra, the São Paulo highlands, where two lakes have been formed to provide hydro-electric power in an attempt to keep pace with the city's ever-increasing needs

the growth of the town was unspectacular. In 1681, under the Governors General who had replaced the High Captains, it became the seat of State government and in 1711 was granted a city charter by the Portuguese King, Dom João VI. But it was still a colonial town on the edge of the virgin sertão. Its citizens were mainly dependent on cattle and mule breeding; some maize and sugar was cultivated.

By the time the independence movement reached its zenith the seeds of fortune beyond all expectations were slowly advancing with the coffee tree up the Paraíba valley from Rio de Janeiro towards São Paulo. The *fazendas* or coffee estates were to transform it into the world's greatest supplier of coffee and ultimately into a city of skyscrapers.

In the last days of union with the Portuguese crown, São Paulo's political influence was out of all proportion to its economic strength and it was in the forefront of the clamour for complete independence. On the banks of the Ypiranga, just outside the city, Dom Pedro (then Regent) raised in 1822 the famous cry "Independence or death!"

A son of São Paulo guided Brazil through the crises which followed. José Bonifácio de Andrada e Silva was the first Prime Minister

of the new Empire, and it was he who held the loosely knit provinces together. Without his guidance and coordination they might well have split into a number of sovereign states.

Nine years later, when the first Emperor abdicated, Bonifácio's wisdom again enabled the country to weather the storm, and gave the young Dom Pedro II the training which helped him to become one of the world's most beloved monarchs. Dom Pedro II and his reign are remembered with affection to this day and his portrait hangs in many private and public buildings. It was not from any personal animosity that São Paulo once again took a leading part in the peaceful transition from Empire to Republic in 1889.

Climate, the coffee bean and the type of immigrants who came there combined to make São Paulo what it is today. In the middle of the last century a far-sighted landlord settled a number of German families as tenants on his estate. He was the pioneer not only of a money-spinning crop but of a social pattern very different from that prevailing in the other provinces. By their skill and industry this handful of Germans enlarged the plantations, and by their way of life they shaped the system of independent farmers

and set an example to be followed by the rest of the country when reliance on slave-labour was ended in 1886.

Dom Pedro II, intent on abolition, gave great encouragement to German and Italian immigrants in the south and, therefore, must receive much of the credit for the momentum of progress which started during his reign and continues with ever-increasing vigour.

The Paulista *fazendeiros* have relied primarily on men of European stock and *mestizos* descended from the early settlers and the Guarani. City and State are a pattern for the world: within their frontiers every nationality under the sun lives, works, contributes to their well-being and does not fight. People of Italian, Portuguese, Spanish and German origin are in the majority. Predominantly Portuguese this cosmopolitan mixture is Mediterranean and not so largely African as in Bahia and Recife. The minority of African ancestry are on a complete equality with everyone else—according to what they can do and what they can earn. All these originally heterogeneous nationalities have become one people: Brazilians. All prejudice and race-nationalism are foreign to them. They owe this to the humanism of the Portuguese culture which they have readily assimilated, and their experience shows with what ease, given

the right environment, ordinary men and women of different mother-tongue and descent can live happily together.

São Paulo proves the falsity of narrow nationalism and racial intolerance. As English becomes the language of the immigrants to North America, so Portuguese is to those Europeans who have found a new life in Brazil. The descendant of the Guarani or the Angolan slave is in no way their inferior either before the law or in his social rights.

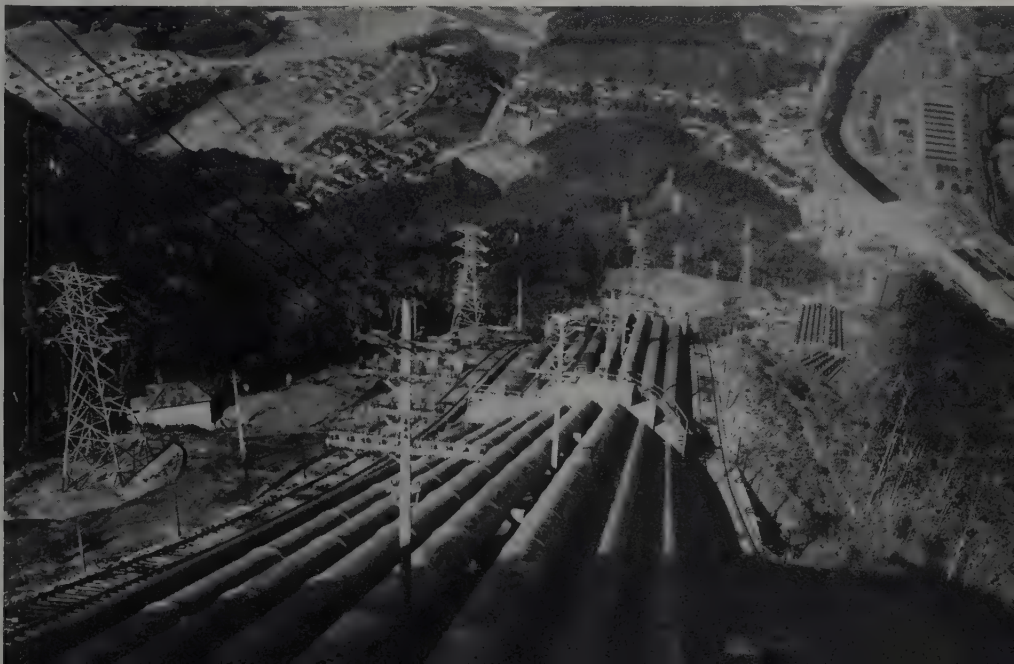
Today, while celebrating an eventful past and the vital rôle it has played in colonial history, the Empire and the United States of Brazil, it is not to politics that São Paulo devotes its energies, but to the creation of wealth and prosperity.

Twenty years ago it was supporting the country solely on the export of coffee. Then came the inevitable consequences of over-production and dependence on a monoculture—a glut on the market and a rapid fall in prices. Coffee beans were used as locomotive fuel and the pictures of vast stocks being deliberately burnt on the dockside at Santos seemed to epitomize the craziness of the boom-and-bust era between the world wars.

The depression in the early thirties was the turning-point in São Paulo's recent history, saving it from further reliance on one product

The Cubatão Power Station of the Brazilian Traction, Light and Power Company. This Canadian firm provides electricity for the many industries that are mushrooming at a fantastic rate in São Paulo

By courtesy of Canadian Brazilian Services Ltd.





I.P.S.

(Above) The old solid-wheeled, mat-sided ox-wagons of Brazil have given place to railways, motors and planes. (Below) The English Electric Company recently completed the electrification of a forty-mile stretch of line from São Paulo and supplied the rolling stock, including fifteen 3000-h.p. locomotives

by courtesy of the English Electric Co., Ltd





Roads in and around São Paulo are as up-to-date as the railways. (Above) Avenida Anhangabaú, with its multiple carriage-ways and 'fly-unders' and covered bus-shelters. (Below) Roads outside the city also have fly-unders. About 1000 miles of road were under construction in the State of São Paulo in 1953

By courtesy of the Brazilian Government Trade Bureau





B.I.P.S.



By courtesy of the Brazilian Government Trade Bureau

São Paulo has been called, with some justification, a "Chicago with palm trees", but it is much more than that. The skyscrapers that rise among its tropical gardens are monuments to an architectural taste that is as lively as the city itself. Brazil more than any other country in the world has given modern architects opportunities to develop the functional glass-and-concrete styles that originated in pre-war Germany and São Paulo's building record—some 95,000 new buildings in five years—must make the city an architect's paradise.



B.I.P.S.

The new Medical School of the São Paulo University. São Paulo is the world's fastest-growing city and educational and social services are developing side by side with commerce and industry

and heralding the period of greatest effort and expansion. In 1920 its population amounted to just over 500,000. Today it is the third largest city in Latin America with some 2,600,000 citizens. The ten years between 1940 and 1950 saw an increase of 67 per cent and industrial output more than trebled in the same decade. The population continues to expand at the rate of nearly 140,000 a year and new buildings at an average of 50 units a day.

After the coffee reverse the Paulistas began to create a well-based economy that is now one of the most diversified, both industrially and agriculturally, in the world. The rise of São Paulo attracted British and American capital, and to this are owed many of the public services and the foundations on which to build. The Santos-São Paulo railway which has been its life-line is due to British enterprise. Rising 2600 feet in 40 miles it is one of the most spectacular engineering feats in the world. A Canadian company has developed the water-power indispensable to the city's industries, and foreign capital must play an important part in development for many years to come.

Racial diversity has naturally helped the

growth of a varied economy and rich cultural life. Each nationality has brought its peculiar skills and talents; they have evolved a way of life and an artistic creativeness that while well-founded in tradition is nevertheless lively and springs from local roots. Technical and commercial ability are prized above all else, and yet these essentially industrial people have succeeded in building a city that is very far removed from the drabness which the European associates with industrialism.

São Paulo State produces more coffee, rice, cotton and sugar than any other State in the Brazilian Union. In 1952 the results of its industry totalled some £4,000,000,000, and the city airport handled more traffic than London Airport: 78,401 aeroplanes arrived and took off.

The State and its capital supply in the region of 55 per cent of the national income and use about the same proportion of electric power, conduct 48 per cent of the country's banking business, manufacture half its textiles and ship half the total of exports. The oft-repeated phrases "Chicago with palm trees" and "Latin-America's greatest industrial city" are no exaggerations, but São Paulo is much more than that. Oscar Niemeyer and Eduardo

Kneese de Mello, foremost among the creators of a new architectural art, have graced wide tree-lined avenues with towering skyscrapers that seem to belong to space, so light do they appear. Viaducts span the main traffic arteries, wide parks and gardens and the clean whiteness of its buildings make São Paulo a city which, for all its material function and energy, has shown that modernity and commerce need not preclude aesthetic achievement.

The characteristics of the people, climate and a position at the heart of the most intensively cultivated Brazilian State (nearly twice as large as England) do not alone account for São Paulo's amazing output and expansion. There is little discovered coal in Brazil—locomotives burn wood, and petroleum is imported. The 40,000 industrial plants (6000 of which are in the municipality), employing 700,000 workers, are only functioning because abundant natural water-power is available.

About thirty-five miles by transmission line from the city one of the world's greatest hydraulic projects has been carried out and is still being extended; for it is taxed to the limit. The rivers which have their source on the São Paulo plateau do not take the quickest route to the sea—forty miles down the escarpment—but flow westward, through the interior, to swell the Paraná and la Plata, a journey to the Atlantic of 2500 miles. They have been dammed to form two lakes: Guarapiranga and the Rio Grande Reservoir. Two years ago the turbines at the foot of a 2160-foot fall, capable of generating 1,000,000 horsepower, were estimated to have a safety-margin of three times the amount required. Today the most pressing need is for more and bigger power stations.

São Paulo's problem is not how to get on, but how to keep the essential services abreast of growth. The docks at Santos are congested and inadequate, the permanent way, which comprises 22 per cent of the country's total mileage, is insufficient and rolling stock is quickly worn out, the road system needs to be greatly extended. To give the highways a metalled surface in so vast a territory is a big undertaking and many are still made of the natural red earth—a dust track in the dry season and a sticky bog in the wet.

The Paulistas face their problems with confidence and optimism. They see before them a limitless prospect and are convinced that their city and State will remain at the van of the "land of the future". As each new great task and obstacle arises they meet and overcome it. This year they are celebrating, with

exhibitions and fairs, both cultural and commercial, the founding of the little mission in Indian territory. That mission was built by faith, vision and courage—qualities which inspire São Paulo today. Its industrial and political leaders know that, just as the spread of the coffee fazendas opened up the rich Sorocaba zone, to the west of the city, and brought prosperity to São Paulo in the 19th century, so the maintenance of its position is tied up with the constant development of the hinterland. It must be the hub of a scientifically exploited and densely settled area, not an isolated wonder-city.

A steady stream of hard-working immigrants to expand the new towns of the interior and to cultivate the soil is essential to its interests. Plans have been worked out for vast capital investment in roads, railways and power plants and for the extension of agricultural research stations. 4000 new schools, at the rate of 1000 a year, are to be built over a four-year period, as well as 160 medical units in the interior and regional hospitals. Many of the weaknesses of the past have been the result of a lack of genuine attachment to the soil. The desire for quick gain has been too much in evidence. This has led to the near-exhaustion of the older fazendas. The matters of greatest urgency today are to encourage a feeling of permanency, to stop the shifting tendency of the population, to encourage the use of fertilizers and to fill the empty frontier belts marching with the Paraná and Matto Grosso.

São Paulo has great advantages over the northern and central States in the realization of its schemes—it is easily accessible, and with modern equipment the interior presents no great obstacles to penetration and settlement.

The land is a combination of crystalline uplands, low mountains and stratified rock of uncomplicated design. The tableland rises quickly from the tropical coastal belt; there is a zone of transition between the north where conditions are favourable to tropical crops and the south where the air is alpine and frosts occur. Rainfall averages between 50 and 60 inches and soil content is high in humus, but there is a tendency to erode—a danger which requires vigorous action now and incessant vigilance. This and the indiscriminate felling of the matto, following haphazard and nomadic penetration, constitute the greatest dangers.

São Paulo's future will only be secure, and past and present achievement prove worth while, if the soil around is rigorously guarded and its exploitation in the future controlled.